

6-3-04

JFW

PTO/SB/21 (04-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/662,853
	Filing Date	September 15, 2003
	First Named Inventor	Nelson A. Kelly et al.
	Art Unit	
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	8540R-000035

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment / Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input checked="" type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Response to Missing Parts/ Incomplete Application  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Technology Center (TC)  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): ~ Form 1449 ~ (8) cited references ~ Return Receipt Postcard
<b>Remarks</b>		The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 07-0960. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Linda M. Deschere	Reg. No. 34,811
Signature			
Date	June 2, 2004		

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Typed or printed name	Linda M. Deschere	Express Mail Label No.	EV 533 149 096 US (6/2/2004)
Signature		Date	June 2, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EV 533 149 096 US



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 10/662,853  
Filing Date: September 15, 2003  
Applicant: Nelson A. Kelly et al.  
Group Art Unit:  
Examiner:  
Title: Photoelectrochemical Device and Method of Making  
Attorney Docket: 8540-000035 (GP-303074)

---

Director of the United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. **LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION**

The patents, publications and other information requested to be considered by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. **COPIES**

A. ☐ Submitted herewith is a legible copy of (i) each U.S. patent application publication and U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; (iii) for each cited pending U.S. application, the application specification including the claims, and any drawing of the application which caused it to be listed including the claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. ☐ Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were

previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number

U.S. Filing Date

C. ☒ Because the present application was/is being filed after June 30, 2003, no copies of the U.S. patents or U.S. patent application publications which are listed on the attached Form 1449 are enclosed pursuant to the waiver of 37 C.F.R. § 1.98(a)(2)(i). Any foreign patent documents or non-patent literature listed on the attached Form 1449 are enclosed herewith.

D. ☐ This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form 1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g).)

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. ☒ Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. ☐ A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. ☐ See the attached foreign patent office communication from a counterpart foreign application:

2. ☐ English translations are provided:

3. ☐ Other:

C. ☐ The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. ☒ The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does (do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No.  
10/608,509

Filing Date  
6/27/2003

Art Unit  
1745

V. THIS IDS IS BEING FILED UNDER

A. ☒ **37 C.F.R. § 1.97(b):** (check only one box)

1. ☐ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. ☐ within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. ☒ before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required.

4. ☐ before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. ☐ **37 C.F.R. § 1.97(c):** (check only one box)

before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. ☐ No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. ☐ See the certification below. No fee is required.

C. ☐ **37 C.F.R. § 1.97(d):**

after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. ☐ See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

A. ☐ each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. 1.704(d) below in section VII, if applicable; or

B. ☐ no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. ☐ some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 C.F.R. 1.704(d)

The undersigned hereby states that:

☐ each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this IDS.

VI. PAYMENT OF FEES (check only one box)

A. ☐ A check in the amount of \$180.00 is enclosed for the above identified fee.

B. ☐ Please charge Deposit Account No. 07-0960 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.


The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 07-0960.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 07-0960.

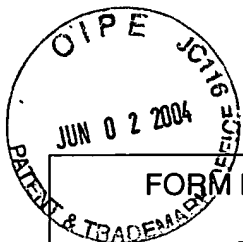
Respectfully submitted,

Dated: June 2, 2004

By:   
Linda M. Deschere  
Reg. No. 34,811

Harness, Dickey & Pierce, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

LDES/srh



FORM HDP-1449 (Based on Form PTO-1449)

**PATENT AND TRADEMARK OFFICE  
INFORMATION DISCLOSURE CITATION**

(Use several sheets if necessary)

Sheet 1 of 3

ATTORNEY DOCKET NO.

SERIAL NO.

GP-303074 (R-35)

10/662,853

APPLICANT

Nelson A. Kelly et al.

FILING DATE

GROUP

September 15, 2003

To Be Assigned

**U.S. PATENT DOCUMENTS**

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
1.		4,466,869	08/21/1984	Ayers		
2.		4,511,638	04/16/1985	Sapru et al.		
3.		4,544,473	10/01/1985	Ovshinsky et al.		
4.		4,545,883	10/08/1985	Ovshinsky et al.		
5.		4,656,103	04/07/1987	Reichman et al.		
6.		4,698,234	10/06/1987	Ovshinsky et al.		
7.		4,737,379	04/12/1988	Hudgens et al.		
8.		4,891,330	01/02/1990	Guha et al.		
9.		4,859,532	08/22/1989	Oyama et al.		
10.		4,954,182	09/04/1990	Ovshinsky et al.		
11.		5,103,284	04/07/1992	Ovshinsky et al.		
12.		5,180,690	01/19/1993	Czubatyj et al.		
13.		5,231,047	07/27/1993	Ovshinsky et al.		
14.		5,670,224	09/23/1997	Izu et al.		
15.		6,063,258	05/16/2000	Sayama et al.		
16.		6,087,580	07/11/2000	Ovshinsky et al.		
17.		6,300,558	10/09/2001	Takamoto et al.		
18.		6,305,442	10/23/2001	Ovshinsky et al.		
19.		6,368,668	04/09/2002	Kobayashi et al.		
20.		6,380,601	04/30/2002	Ermer et al.		
21.		6,432,284	08/13/2002	Narayanan et al.		

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<p>FORM HDP-1449 (Based on Form PTO-1449)</p> <p><b>PATENT AND TRADEMARK OFFICE</b></p> <p><b>INFORMATION DISCLOSURE CITATION</b></p> <p>(Use several sheets if necessary)</p> <p>Sheet 2 of 3</p>	ATTORNEY DOCKET NO.	SERIAL NO.
	GP-303074 (R-35)	10/662,853
	APPLICANT	
	Nelson A. Kelly et al.	
	FILING DATE	GROUP
	September 15, 2003	To Be Assigned

U.S. PATENT DOCUMENTS						
Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
22.		6,471,834	10/29/2002	Roe et al.		
23.		6,521,381	02/18/2003	Vyas et al.		

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)		
Ref. Desig.	Examiner's Initials	
1.		Deng and Schiff, 2002, " <i>Amorphous Silicon Based Solar Cells</i> ," chapter separately published on Xunming Deng's website: <a href="http://www.physics.utoledo.edu/~dengx/papers/deng03a.pdf">http://www.physics.utoledo.edu/~dengx/papers/deng03a.pdf</a> . Also published in 2003 by Deng and Schiff. Chapter 12, pages 505-565 in <i>Handbook of Photovoltaic Engineering</i> , ed. A. Luque & S. Hegedus, by John Wiley & Sons, Ltd.,
2.		Deng et al., 1998, "Study of Sputter Deposition of ITO Films for a-Si:H n-i-p Solar Cells," in Proceedings of 2nd World Conference and Exhibition on Photovoltaic Solar Energy Conversion, 700-703
3.		Arcosta et al., 1996, "About the Structural, Optical and Electrical Properties of SnO <sub>2</sub> Films Produced by Spray Pyrolysis from Solutions with Low and High Contents of Fluorine," Thin Solid Films, 288, 1-7
4.		Proceedings of the 2002 U.S. DOE Hydrogen Program Review NREL/CP-610-32405 entitled, "Photoelectrochemical Systems for Hydrogen Production", authored by Varner et al., 2002.
5.		"Proceedings of the 2000 Hydrogen Program Review" NREL/CP-570-28890 entitled, "Photoelectrochemical Hydrogen Production", authored by Miller and Rocheleau, 2000
6.		"High-efficiency Amorphous Silicon Thin Film Solar Cells" by Dr. Xunming Deng, 2 pages, Toledo website: dengx@physics.utoledo.edu.

Examiner:	Date Considered:
-----------	------------------

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>FORM HDP-1449 (Based on Form PTO-1449)</b>  <b>PATENT AND TRADEMARK OFFICE</b> <b>INFORMATION DISCLOSURE CITATION</b> (Use several sheets if necessary)  Sheet 3 of 3	ATTORNEY DOCKET NO.	SERIAL NO.
	GP-303074 (R-35)	10/662,853
	APPLICANT	
	Nelson A. Kelly et al.	
	FILING DATE	GROUP
	September 15, 2003	To Be Assigned

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)		
Ref. Desig.	Examiner's Initials	
7.		"Deng, Liao, Han, Povolny and Agarwal, (2000) "Amorphous Silicon and Silicon Germanium Materials for High-efficiency Triple-junction Solar Cells", pages 89-95, website: <a href="http://www.celsevier.com/locate/solmat">www.celsevier.com/locate/solmat</a> .
8.		"Pilkington TEC Glass" (1999), 2 pages, product brochure.

Examiner:	Date Considered:
-----------	------------------

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.